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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,311	04/13/2004	Che-Hsiung Hsu	UC0423USNA	4769

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WILMINGTON, DE 19805

EXAMINER

YAMNITZKY, MARIE ROSE

ART UNIT	PAPER NUMBER
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1774

DATE MAILED: 10/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/823,311

Applicant(s)

HSU ET AL.

Examiner

Marie R. Yamnitzky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 13-15 and 19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 16-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>rec'd 11 Aug 2004</u> . | 6) <input type="checkbox"/> Other: _____ |

1. Applicant's election without traverse in the reply filed on July 19, 2006 is acknowledged. With respect to the different combinations of materials for the first and second layers of the claimed composite, applicant elects polythiophene and substituted polythiophenes for the first layer, and a colloid-forming polymeric acid for the second layer. With respect to the different electronic devices, applicant elects a light-emitting diode. For the polythiophene of Formula 1, applicant further elects alkoxy for R^1 , wherein both R^1 together may form $-O-(CHY)_m-O-$. For the colloid-forming polymeric acid, applicant further elects fluorinated polymeric sulfonic acids.

Claims 1-12 and 16-18 read on the elected species. As presently written, the examiner interprets claims 3-5 and 9-12 as further defining one of several materials that may be used, but not as requiring the material that is further defined. In contrast, claims 13-15 do not read on the elected species as these claims explicitly require the second layer to comprise a material outside the scope of the elected species.

2. Claims 13-15 and 19 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on July 19, 2006. Withdrawn species claims will be subject to further consideration upon allowance of a generic or linking claim.

3. Will some prior art is applied against non-elected species in this action, this action does not represent an examination on the merits of all species within the scope of the examined claims.

4. Claims 3-5 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The scope of polythiophenes as defined in claim 3 is not clear in that the definition of “n” in Formula 1 is not clear in reciting “at least about”. It is not clear if “n” must be at least 4, or if 3 (or 2 or 1) meet the limitations of “at least about” 4. Similarly, the scope of polypyrroles as defined in claim 4 and polyanilines as defined in claim 5 is not clear because the definition of “n” in Formulae II, III and IV is not clear.

Claim 17 is confusing in depending from claim 16 and referring to “the composition of Claim”. No claim number follows “Claim” in line 2 of claim 17, and proper antecedent basis is lacking for “the composition” as recited in line 2. Presuming “the composition of Claim” refers to the composite of claim 1, and noting that claim 16 refers to the composite according to claim 1, the examiner suggests that claim 17 be amended by inserting --said-- after “wherein” in line 1, and changing “composition of Claim” to --composite-- in line 2.

5. Regarding claim interpretation:

As previously noted, claims 3-5 and 9-12 are interpreted as further defining one of several materials that may be used, but not as requiring the material that is further defined.

The examiner interprets the phrase “colloid-forming” as a “capable of” limitation in that the polymeric acid (or salt of the polymer acid) must be capable of forming a colloid. The

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examiner does not interpret this phrase as requiring that the polymeric acid (or salt of the polymeric acid) be present in colloidal form in the second layer.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by C.-H. Hsu in *Synthetic Metals*, 41-43 (1991), pp. 671-674.

See the whole article. In particular, see the full paragraph on p. 672 and the first five lines on p. 673.

Hsu describes an electrically conducting composite meeting the limitations of present claims 1-12 in which the first layer comprises a doped conductive polymer wherein the conductive polymer is a polyaniline, and the second layer comprises a colloid-forming polymeric acid wherein the colloid-forming polymeric acid is a perfluorinated polymeric sulfonic acid.

8. Claims 1-12 and 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohtani et al. (US 4,869,979).

See the whole patent. In particular, see column 3, lines 4-36, c. 4, l. 4-16 and 40-44, and claims 6-10.

Ohtani et al. describe an electronic device in which a layer of Nafion (within the scope of the colloid-forming polymeric acid required by the present claims) is adjacent a layer of doped conductive polymer such as doped polythiophene, polypyrrole or polyaniline.

9. Claims 1-12 and 16-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Kokonaski et al. (US 2004/0217877 A1).

See Figures 4, 4A, 5 and 5A, and paragraphs [0025] and [0026]. Kokonaski et al. teach using PEDOT:PSS and Nafion in adjacent layers in electronic devices. PEDOT:PSS anticipates applicant's elected species for the first layer material, and Nafion anticipates applicant's elected species for the second layer material. Kokonaski et al. also teach that conductive polymers such as polyaniline or polypyrrole may be used in place of PEDOT:PSS.

Kokonaski's patent application claims priority to several provisional and non-provisional U.S. patent applications. Two of the priority provisional applications (60/457,115, filed March 21, 2003, and 60/460,353, filed April 03, 2003) provide support for the subject matter relied upon in the present rejection.

10. Claims 1-12 and 16-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Hsu et al. (US 2004/0102577 A1).

The applied reference has a common inventor with the instant application, but a different inventive entity. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

See the whole publication. In particular, see paragraphs [0002]-[0006], [0025]-[0048], [0065]-[0068], [0090], [0132]-[0138] and claims 39-42.

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over C.-H. Hsu in *Synthetic Metals*, 41-43 (1991), pp. 671-674 as applied to claims 1-12 above, and for the further reasons set forth below.

Hsu does not describe an electronic device comprising the electrically conducting composite. It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention to utilize the disclosed electrically conducting composite in an electronic device based on the suitability of the conductive properties of the composite for the intended use. One

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of ordinary skill in the art at the time of the invention would have been motivated to use the disclosed electrically conducting composite in devices in which the properties of the composite would be useful.

13. Miscellaneous:

Claims 3-5: "alkythio" should read --alkylthio--.

Claim 18: --from-- should be inserted after "selected" in line 1.

14. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (571) 272-1531. The examiner works a flexible schedule but can generally be reached at this number from 6:30 a.m. to 4:00 p.m. Monday, Tuesday, Thursday and Friday, and every other Wednesday from 6:30 a.m. to 3:00 p.m.

The current fax number for all official faxes is (571) 273-8300. (Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (571) 273-1531.)

MRY
October 13, 2006



MARIE YAMNITZKY
PRIMARY EXAMINER

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